Concept Note on Methodology to Estimate progress of National and Local DRR Strategy to Measure the Achievement of Target E of the Sendai Framework for Disaster Risk Reduction: A Technical Review

17 November 2015

The United Nations Office for Disaster Risk Reduction

Background

This document outlines suggested options regarding computation methodology for two indicators to monitor the progress and achievement of Target E. It aims to prepare options that countries may wish to consider in preparation for further discussions on global indicators by complementing the background paper "The Indicators to Monitor Global Targets of the Sendai Framework for Disaster Risk Reduction 2015-2030: A Technical Review", submitted to the Open-ended Intergovernmental Expert Working Group on Indicators and Terminology Related to Disaster Risk Reduction, held on 29-30 September 2015.

Target E: Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020

> E-1: Number of countries that adopt and implement national DRR strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030
>
> E-2: Percentage of local governments that adopt and implement local DRR strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030

In the 1st session of the Open-ended Intergovernmental Expert Working Group, several countries called for clarification on the minimum standard of DRR strategy and computation method for these indicators. The issue was raised if it is possible to have quantitative indicators to measure the level of progress, rather than applying only Yes/No as regards plan availability. Several countries also addressed the need to make these indicators more related with the Goals and Priorities of action of the Sendai Framework for Disaster Risk Reduction.

These two indicators are also currently examined in the SDG indicator discussion in the Inter-Agency Expert Group and asked for the urgent development of methodology. Indicators - simply counting the number of countries - are not technically recommended in the SDG discussion. Instead, indicators to measure global and national progress have been promoted. This argument can also be applied to the local level and indicators monitoring gradual progress might be welcomed. There was also discussion that the population coverage of such a plan would be important for a people-centered approach.

Based on these consideration expressed by countries in the Sendai and SDG indicators discussion, UNISDR developed a discussion paper for a computation methodology for these two indicators to contribute to further examination by countries.

Indicator E-1 Number of countries that adopt and implement national DRR strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030

Two options are suggested below. Option 1 is the minimum requirement to measure Target E. Option 2 can also measure the degree to which that the DRR Strategy is in alignment with the Sendai Framework for Disaster Risk Reduction. The process for setting targets and indicators is expected to take time. The introduction of a Progress Index will allow for the monitoring of such continuing and gradual improvement in strategy development.

In both cases, countries report status information and UNISDR calculates the global figure.

Option 1 (Minimum requirement): Simply count **the number of countries** which reported on the adoption and implementation of the national DRR strategy in line with the Sendai Framework for Disaster Risk Reduction 2015-2030.

Definition of the National DRR Strategy can be taken from the paragraph 27 (b) of the Sendai Framework.

> ***National DRR strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030****:* national disaster risk reduction strategies and plans, across different timescales with targets, indicators and time frames, aimed at preventing the creation of risk, the reduction of existing risk and the strengthening of economic, social, health and environmental resilience (Sendai Framework, para 27(b)).
>
> Additional concern is that coherence among DRR, climate change adaptation and sustainable development is strongly advocated in the Sendai Framework. The DRR strategies should be based on risk information and assessments.

It is suggested that countries evaluate if their national DRR strategies satisfy the minimum requirement outlined in the Sendai Framework paragraph 27 (b).

Option 2: Create an index (temporarily called **National DRR Strategy Index**) to reflect progress in more details. National DRR strategy does not have a clear definition in itself, but the minimum criteria are defined as elements of the Progress Index below. The criteria include elements of Paragraph 27 (b) of the Sendai Framework.

National DRR Strategy Index =

Progress index$_1$ + Progress Index$_2$+…+ Progress Index $_n$

Where

n =number of countries reporting the progress on national DRR strategy

The score of non-reporting countries is assumed as zero (not having national DRR strategy) and therefore not included in the formula.

The Progress Index checks the degree to which the national DRR strategy satisfies 5 elements defined in the Sendai Framework paragraph 27 (b). The five elements are (a) setting time frames and targets, (b) setting indicators, (c) setting objectives and measures aiming at preventing the creation of risk, (d) setting objectives and measures aiming at the reduction of existing risk, and (e) setting objectives and measures aiming at the strengthening of economic, social, health and environmental resilience.

Each element is assigned 0.2 (20%). If a country has a DRR strategy satisfying the five elements, it is evaluated as 1. If a country reports the lack of DRR strategy, it is evaluated as 0. If a country has a contingency or preparedness plan which has objectives and measures aiming at the strengthening of economic, social, health and environmental resilience, but not addressing the prevention of risk creation and reduction of existing risk and also not having targets and indicators, then it is evaluated as 0.2.

The score of National DRR Strategy index will increase when the number of countries reporting on the adoption and implementation of national DRR strategy increases and/or the quality of national DRR strategy improves to satisfy the definition of the DRR strategy outlined in the Sendai Framework.

The five elements would have variation. An example is combining (a) and (b) to make new (a) setting timeframes, targets and indicators, and adding a new (b) being informed by risk assessment and information. However, it is not recommended to significantly change the five elements to be consistent with the Sendai Framework.

This option is more complicated than option 1. However, without putting significant additional burden, it is possible to monitor quality improvement of national DRR strategy. Given that target and indicator setting is usually a process taking time, instead of evaluating the plan which does not satisfy the Sendai Framework para 27 (b) definition as zero in Option 1, option 2 can evaluate the achieved element as 0.2, 0.4, 0.6 and 0.8.

Indicator E-2 Percentage of local governments that adopt and implement local DRR strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030

Four options are suggested below. Option 1 is the minimum requirement to measure Target E. Option 2 can measure the degree to which the DRR Strategy is in alignment with the Sendai Framework for Disaster Risk Reduction. The process for setting targets and indicators is expected to take time. The introduction of the Progress Index will allow monitoring such continuing and gradual improvement of the strategy development.

The variations in size of local governments might need attention on the population coverage of local strategies. In a country where the majority of small local governments adopt and implement local DRR strategies but one big local government does not have a local DRR strategy, a significant percentage of the national population will not be covered by local DRR strategies. From a human-centered perspective, option 3 is proposed to take population coverage into consideration. Option 4 is the combination of the options 2 and 3 (Table 1).

Table 1 Four options suggested

	Progress (quality improvement)	Population coverage
Option 1	-	-
Option 2	x	-
Option 3	-	x
Option 4	x	x

The required information from countries for each option is as follows (Table 2). In all cases, countries report status information and UNISDR calculates the global average percentage.

Table 2 Required information from countries for each option

	Option1	Option2	Option 3	Option4
DRR strategy adoption and implementation (Required for all options)	X	x	x	X
Progress Index (explained below) (Required for options 2 and 4)	-	x	-	x
Population Share Index (explained below) (Required for options 3 and 4)	-	-	x	x

Definition :

It is currently proposed to define the **local government** as a "form of public administration at the lowest tier of administration within a given state, which generally acts within powers delegated to them by legislation or directives of the higher level of government".

It is proposed as the lowest tier because between national level and municipality (lowest) level, there is much variance of sub-national governments across countries (e.g. state, prefecture, department, province, canton). Additionally, lowest tier governments are the closest to the citizens and serve as the base of resilience building.

This indicator needs caution because administrative reform in a country will influence the percentage in each option by changing the total number of local governments. However, no solution can be found on this issue.

In options 1 and 3, **Local DRR Strategy** is defined as local disaster risk reduction strategies and plans, across different timescales with targets, indicators and time frames, aimed at preventing the creation of risk, the reduction of existing risk and the strengthening of economic, social, health and environmental resilience (Sendai Framework, para 27(b)).

In Option 2 and 4, Local DRR strategy does not have clear definition in itself but the minimum criteria are defined as elements of the Progress Index. The criteria include the elements of Paragraph 27 (b) of the Sendai Framework.

Additional concern in both cases is that coherence among DRR and climate change adaptation and sustainable development is strongly advocated in the Sendai Framework. The DRR strategies should be based on risk information and assessments.

Option 1 (Minimum requirement): Calculate global average: Add each country's percentage of local government adopting and implementing local DRR strategy and divide the value by the number of countries reported.

Global average = (Percentage of Country$_1$ + Percentage of Country$_2$ +…+Percentage of Country $_n$)
/ Number of countries reported
n =number of countries reported

National average = Number of local government adopting and implementing local DRR strategy /total number of local government in a country

Definition of the Local DRR Strategy will be taken from paragraph 27 (b) of the Sendai Framework.

Countries are suggested to evaluate if their local DRR strategies satisfy the minimum requirement outlined in the Sendai Framework paragraph 27 (b).

Non-reporting local government is assumed as not having a local DRR strategy.

Option 2: Create an index (temporarily called **Local DRR Progress Index**) to reflect the national progress in local DRR Strategy quality, add each country's Index and divide the value by the number of countries reported to calculate the global average.

Global Average = (Local DRR Progress Index$_1$+ Local DRR Progress Index$_2$ +…+Local DRR Progress Index $_n$) / Number of countries reported

n =number of countries reported

Local DRR Progress Index in a country=

Progress Index$_1$ + Progress Index$_2$+…+ Progress Index $_n$ / Total number of local government in a country

Where

n =total number of local governments in a country

The score of non-reporting local governments is assumed as zero in terms of the Progress Index (not having DRR strategy).

The Progress Index checks the degree to which the local DRR strategy satisfies the 5 elements defined in the Sendai Framework paragraph 27 (b). The Five elements are (a) setting time frames and targets, (b) setting indicators, (c) setting objectives and measures aiming at preventing the creation of risk, (d) setting objectives and measures aiming at the reduction of existing risk, and (e) setting objectives and measures aiming at the strengthening of economic, social, health and environmental resilience.

Each element is assigned 0.2 (20%). If a local government has a DRR strategy satisfying the five elements, it is evaluated as 1. If a local government reports the lack of DRR strategy, it is evaluated as 0. If a local government has a contingency or preparedness plan which has objectives and measures aiming at the strengthening of economic, social, health and environmental resilience but not addressing the prevention of risk creation and reduction of existing risk and also not having targets and indicators, then it is evaluated as 0.2 (20%).

The score of the Global Average will increase when more local governments report on the adoption and implementation of local DRR strategy and/or the quality of local DRR strategy improves to satisfy the definition of the DRR strategy outlined in the Sendai Framework.

The five elements can have variation. An example is combining (a) and (b) to make new (a) setting timeframes, targets and indicators, and adding a new (b) being informed by risk assessment and information. However, it is not recommended to significantly change the five elements to be consistent with the Sendai Framework.

This option is more complicated than option 1. However, without putting significant additional burden, it is possible to monitor quality improvement of the local DRR strategy. Given that target and indicator setting is usually a process taking time, instead of evaluating the local plan which does not satisfy the Sendai Framework para 27 (b) definition as zero in option 1, option 2 can evaluate the achieved element as 0.2, 0.4, 0.6 and 0.8.

Option 3: Create an index (temporarily called **Local DRR Population Share Index**) to reflect the population coverage of local DRR Strategies at national level, add each country's Index and divide the value by the number of countries reported to calculate global average.

Global average= (Local DRR Population Share Index$_1$+ Local DRR Population Share Index$_2$ +…+ Local DRR Population Share Index $_n$) / Number of countries reported

n = number of countries reported

Local DRR Population Share Index in a country=

Local government (LG)$_1$ * Population Share Index$_1$ + LG$_2$*Population Share Index$_2$+…+LG $_n$ * Population Share Index $_n$ / Total number of local government in a country

Where

Local Government (LG): Binary value 1 or 0 is given. Local governments reporting the adoption/implementation of local DRR strategy in line with the Sendai Framework is given 1 while local governments reporting the lack of such a plan is given 0. Non-reporting local government is assumed as zero (not having DRR strategy).

n = total number of local governments reported

Population Share Index: the local government's population share (%) in national population

The score of the Global Average will increase when the number of local governments reporting the adoption and implementation of a local DRR strategy in line with the Sendai Framework increases and/or the population share of local governments adopting/implementing DRR strategy increases.

This option is more complicated than option 1. However, without putting significant additional burden, it is possible to monitor the population coverage of local DRR strategy.

Option 4: Create an index (temporarily called **Local DRR Progress Population Index**) to reflect the quality improvement and population coverage of local DRR Strategies at national level, add each country's Indexes and divide the value by the number of countries reported to calculate global average.

Global average = (Local DRR Progress Population Index$_1$+ Local DRR Progress Population Index$_2$ +…+ Local DRR Progress Population Index $_n$) / Number of countries reported

n =number of countries reported

Local DRR Progress Population Index in a country=

Local government (LG)$_1$ * Progress Population Index$_1$ + LG$_2$*Progress Population Index$_2$+…+LG $_n$ * Progress Population Index $_n$/ Total number of local governments in a country

Where

Local Government (LG): Binary value 1 or 0 is given. Local governments reporting the adoption/implementation is given 1 while local governments reporting lack of the adoption/implementation is given 0. Non-reporting local government is assumed as zero (not having DRR strategy).

n = total number of local governments in a country

Progress Population Index: the Progress Index * Population Share Index

The score of Global average will increase when (a) the number of local governments reporting the adoption and implementation of local DRR strategy increases, (b) the quality of local DRR strategy improves to satisfy the definition of the DRR strategy outlined in the Sendai Framework, and/or (c) the population share of local governments adopting/implementing DRR strategy increases.

This option is the most complicated. Interpretation needs caution by introducing several elements.

Example:

National Level

Let us suppose an imaginary country having 4 local governments. The information reported from these 4 local governments for each option is as follows.

	Local 1	Local 2	Local 3	Local 4
DRR strategy adoption and implementation	Yes	Yes	Yes	No
Progress Index (a)	100%	80%	60%	0
Population Coverage Index (b)	40%	30%	15%	15%
Progress Population Index ((a)*(b))	40%	24%	9%	0

Note: The table shows only Local 1 satisfies definition of para 27 (b) of the Sendai Framework (Progress Index is 100%).

Option 1

Percentage is 25%

(1 out of 4 local governments having local DRR strategies satisfying 5 elements in paragraph 27 (b) of the Sendai Framework. Local governments 2 and 3 might have local DRR strategy but the strategies are not satisfying the 5 elements judging from the Progress Index. Therefore, they are evaluated as not satisfying the definition of local DRR strategy in alignment with the Sendai Framework and therefore are scored as zero.).

Option 2

(1*100% + 1*80% + 1*60% + 0)/4=240%/4 =60%

Currently remaining 40% is attributed to no plan in local 4 and lacking elements in local 2 and 3. If the local 4 adopts and implements the plan satisfying all 5 elements, then

(1*100% + 1*80% + 1*60% + 1*100%)/4=340%/4 =85%. Remaining 15% can be remedied by quality improvement of plans in local 2 and 3.

Option 3

(1*40% + 0% + 0% + 0%)/4 = 40%/4 = 10%

(Only Local 1 satisfies the definition of local DRR strategy and is counted as 1.)

Option 4

(1*40% + 1*24% + 1*9% + 0)*/4 = 73%/4 =18%

Global Level

Let us suppose an imaginary world consisting of 3 countries. The information reported from these 3 countries for each option is as follows.

	Country 1	Country 2	Country 3
Option 1: DRR strategy adoption and implementation	25%	50%	40%
Option 2: Local DRR Progress Index	60%	80%	50%
Option 3: Local DRR Population Share Index	10%	50%	75%
Option 4: Local DRR Progress Population Index	18%	48%	60%

Option 1: (25% + 50% +40%)/ 3 = 38%

Option2: (60% + 80% +50%)/ 3 = 63%

Option3: (10% + 50% +75%)/ 3 = 45%

Option4: (18% + 48% +60%)/ 3 = 42%